

Claims

1. A protein of the following (a) or (b), or a salt thereof:
 - (a) a protein having the amino acid sequence shown by SEQ ID NO:2, the amino acid sequence shown by SEQ ID NO:25, or an amino acid sequence substantially the same as these;
 - (b) a protein having the amino acid sequence shown by SEQ ID NO:4, the amino acid sequence shown by SEQ ID NO:27, or an amino acid sequence substantially the same as these.
2. A protein of any of the following (a1) to (a4) and (b1) to (b4), or a salt thereof:
 - (a1) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:2, which binds to a plasticizer when forming a complex with the amino acid sequence shown by SEQ ID NO:4 or SEQ ID NO:27;
 - (a2) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:2, which binds to a plasticizer when forming a complex with a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:4 or SEQ ID NO:27;
 - (a3) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:25, which binds to a plasticizer when forming a complex with the amino acid sequence shown by SEQ ID NO:4 or SEQ ID NO:27;
 - (a4) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:25, which binds to a plasticizer when forming a complex with a protein having an amino acid sequence having one or two or more amino acids

deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:4 or SEQ ID NO:27;

(b1) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:4, which binds to a plasticizer when forming a complex with a protein having the amino acid sequence shown by SEQ ID NO:2 or SEQ ID NO:25;

(b2) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:4, which binds to a plasticizer when forming a complex with a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:2 or SEQ ID NO:25:

(b3) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:27, which binds to a plasticizer when forming a complex with a protein having the amino acid sequence shown by SEQ ID NO:2 or SEQ ID NO:25:

(b4) a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:27, which binds to a plasticizer when forming a complex with a protein having an amino acid sequence having one or two or more amino acids deleted, substituted or added in the amino acid sequence shown by SEQ ID NO:2 or SEQ ID NO:25.

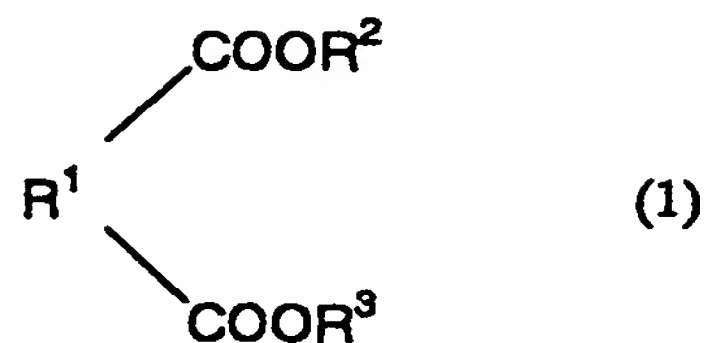
3. A protein of the following (a) or (b), or a salt thereof:

(a) a protein having the amino acid sequence shown by SEQ ID NO:2 or an amino acid sequence substantially the same as these;

(b) a protein having the amino acid sequence shown by SEQ ID NO:4 or an amino acid sequence substantially the same as these.

4. The protein of claim 2 or 3, wherein the plasticizer is a

plasticizer represented by formula (1):



wherein R^1 represents o-phenylene, and R^2 and R^3 are the same or different and each represents H, a linear or branched alkyl having 1 to 20 carbon atoms, a benzyl that may be substituted, or a cyclohexyl that may be substituted.

5. A method of genetically recombining a protein of any one of claims 1 to 4 and 6.

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6. A protein obtained by the method of claim 5, or a salt thereof.

7. A partial peptide of a protein of any one of claims 1 to 4 and 6, or a salt thereof.

8. A polynucleotide encoding a protein of any one of claims 1 to 4 and 6, or a partial peptide thereof.

9. A recombinant vector harboring the polynucleotide of claim 8.

10. A transformant transformed with the recombinant vector of claim 9.

11. A method of producing a protein of any one of claims 1 to 4 and 6, a partial peptide thereof, or a salt thereof, which comprises producing a protein of any one of claims 1 to 4 and 6, a partial peptide thereof, or a salt thereof and harvesting the same.

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12. A complex wherein the following (a) and (b) are linked:

(a) a protein having the amino acid sequence shown by SEQ ID NO:2, the amino acid sequence shown by SEQ ID NO:25, or an amino acid sequence substantially the same as these;

(b) a protein having the amino acid sequence shown by SEQ ID NO:4, the amino acid sequence shown by SEQ ID NO:27, or an amino acid sequence substantially the same as these.

13. A method of identifying a plasticizer that binds to the complex of claim 12, which comprises using the complex.

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14. A method of measuring or quantifying a plasticizer, which comprises using the complex of claim 12.

15. A kit for measuring or quantifying a plasticizer, which comprises the complex of claim 12.

16. A method of concentrating a plasticizer, which comprises using the complex of claim 12.

20 17. A kit for concentrating a plasticizer, which comprises the complex of claim 12.